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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/895,878	07/02/2001	Byung-in Ma	1293.1222	5378

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EXAMINER	
TRAN, THANG V	

ART UNIT	PAPER NUMBER
2653	

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/895,878	MA ET AL.	
	Examiner	Art Unit	
	Thang V. Tran	2653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 June 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *6-10 and 17* is/are allowed.

6)☒ Claim(s) *1-5,11-13,18-21 and 23-29* is/are rejected.

7)☒ Claim(s) *14-16 and 22* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

The communication dated 06/03/04 has been considered, the restriction requirement mailed 05/03/04 is hereby withdrawn. All claims are now examined together as follow.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 4, 11 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Maeda (US 4,920,527).

Maeda, according to Fig. 1 or 7, shows a detection apparatus comprising all features of the instant claimed invention as interpreted below.

Regarding claims 1 and 4, see Fig. 1 or 7 which shows a detection apparatus comprising: a photodetector (6) having first, second and third light receiving regions (A-C) arranged in a radial direction of a recording medium, to independently perform photoelectric conversion with respect to incident light which is reflected/diffracted by the recording medium and to generate first, second and third detection signals (P_A-P_C), respectively; and a subtracter (8) which subtracts a sum of the first and third detection signals (P_B, P_C) and the second detection signal

(P_A) and outputs the error signal (FE) as recited in apparatus claim 1 and corresponding functional method claim 4.

Regarding claims 11 and 19, see Fig. 1 or 7 which shows a detection apparatus comprising: detector (6) for performing a step of generating first, second and third detection signals, the first and second detection signals (P_B, P_C)corresponding respectively to light reflected from radially inward and radially outward portions of a light spot formed on the optical disc, and the third detection signal (P_A) corresponding to light reflected/refracted from a central portion of the light spot; and a subtractor (8) for performing a step of subtracting a sum of the first and second detection signals and the third detection signal to output the error signal (FE).

3. Claims 1,3, 4, 5, 11, 12, 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamanaka (US 5,930,213).

Yamanaka, according to Figs. 3-8B, shows a detection apparatus comprising all features of the instant claimed invention as interpreted below.

Regarding claims 1 and 4, see Fig. 7 which shows a detection device comprising: a photodetector (7) having first, second and third light receiving regions arranged in a radial direction of a recording medium, to independently perform photoelectric conversion with respect to incident light which is reflected/diffracted by the recording medium and to generate first, second and third detection signals , respectively; and a subtracter (15) which subtracts a sum of the first and third detection signals (signal from adder 14) and the second detection signal

(signal from adder 13) and outputs the error signal (defocus signal used as discriminating signal from subtracter 15) as recited in apparatus claim 1 and corresponding functional method claim 4.

Regarding claims 3 and 5, see information related to land and groove of an optical disk in Yamanaka.

Regarding claims 11, 12 and 19, see Fig. 7 which shows a detection apparatus comprising: detector (7) for performing a step of generating first, second and third detection signals, the first and second detection signals corresponding respectively to light reflected from radially inward and radially outward portions of a light spot formed on the optical disc, and the third detection signal (signal from adder 13) corresponding to light reflected/refracted from a central portion of the light spot; and a subtractor (15) for performing a step of subtracting a sum of the first and second detection signals and the third detection signal to output the error signal (defocus signal used as discriminating signal from subtracter 15), as recited in claims 11, 12 and 19.

Regarding claim 20, see detector 7 and adder 13 in Fig. 7 of Yamanaka.

4. Claim 18 is rejected under 35 U.S.C. 102(e) as being anticipated by Sano et al (US. 6,418,095)

Sano et al, according to Fig. 7, shows a detection apparatus comprising detector (150) for generating first, second, third and fourth detection signals (signals from adders 401-404), the first and second detection signals corresponding respectively to light reflected/refracted from radially inward and radially outward portions of a light spot formed on the optical disc, and the third and fourth detection signals corresponding to light reflected/refracted from first and second central portions of the light spot; and a subtractor (406) subtracting a sum (signal from adder 407) of the

first and third detection signals and a sum (signal from adder 408) of the second and fourth detection signals to generate a push-pull tracking error signal .

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 2, 13 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamanaka in view of Sano et al.

Yamanaka, according to Fig. 7, shows all the features of the instant claimed invention 9see the rejection above) except for the use of eight light receiving region to detect information signals recorded on the recording medium, as further recited in claim 2, and the use of the subtracter used to generate a tracking error signal as further recited in claims 13 and 21. Sano, according to Fig. 2 teach the use of eight light receiving region to detect information signals recorded on the recording medium, and according to Fig. 7, teach the use of the subtracter used to subtract a sum (signal from adder 407) of the first and third detection signals and a sum (signal from adder 408) of the second and fourth detection signals to generate a push-pull tracking error signal. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the photodetector and its operation in the apparatus of Yamanaka based on the teaching of Sano et al in order to reproduce data recorded on the recording medium and generate a tracking error signal with more accuracy.

7. Claims 23-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamanaka.

Yamanaka, according to Figs. 7-8B, shows all the features of the instant claimed invention (see the rejection above) except for the use of a recording medium having particular track pitch as recited in claims 23-25. However, using the recording medium having particular track pitch as recited in claims 23-25 are well known in the data storage and retrieval art at the time the invention was made in order to record data with higher capacity. It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the recording medium in the apparatus of Yamanaka with a recording medium having a particular track pitch as recited in each of claims 23-25 which is well know in the art in order record data with higher capacity. For limitation in claim 26-29 see Fig. 8A of Yamanaka.

Allowable Subject Matter

8. Claims 6-10 and 17 are allowed.

9. Claims 14-16 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Claims 6-10, 14-17 and 22 are allowable over the prior art of record because the prior art of record, considered in combination or individually, fails to suggest or fairly teach a seeking direction detecting apparatus or method including a combination of all limitations as recited in each of claims 6, 9, 14, and 22, or a combination of all limitations as cited in claim 17. Claims, 7, 8, 10, 15 and 16 are allowable with their respective parent claim.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thang V. Tran whose telephone number is (703) 308-1551. The examiner can normally be reached on M-F 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on 703 305-6137. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thang V Tran
Primary Examiner
Art Unit 2653